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# ABSTRACT

The present invention is a polymer solution for the efficient separation of charged macromolecules by electrophoresis that includes a plurality of polymers. These polymers are entangled to form an interpenetrating network with greater entanglement times than corresponding homopolymers of the same length. These polymers are different and do not phase separate when dissolved in solution. Preferred polymers are PAM and PVP or PDAM and PVP. The polymer solutions of the present invention provide at least a 500-base read length in one run for a single-stranded DNA separation.

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